A

TREATISE
ON THE
TEETH:

WHEREIN
AN ACCURATE IDEA OF THEIR STRUCTURE
IS GIVEN,
THE CAUSE OF THEIR DECAY POINTED OUT,
AND
THEIR VARIOUS DISEASES ENUMERATED;
TO WHICH IS ADDED,
THE MOST EFFECTUAL METHOD OF TREATING
THE
DISORDERS OF THE TEETH AND GUMS,
Eſtabliſhed by a long and ſucceſsful Practice,

BY THE CHEVALIER RUSPINI,
SURGEON DENTIST TO HIS ROYAL HIGHNESS THE
Prince of Wales.

THE TENTH EDITION.

In this Treatiſe, the Chevalier Ruſpini has added an Account of his extraordinary BALSAMIC STYPTIC SOLUTION, with a Liſt of the Letters which he has received from Perſons of the firſt Character and Reſpectability, as well as Gentlemen of the Faculty, all uniformly teſtifying to its good Effects, in internal and external Bleedings, and in many other Complaints.

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TO THE

FIRST EDITION.

IT is needleſs to uſher in this performance to the world by a Preface in the common form, proving the importance of the ſubject to be treated of, and the neceſſity of taking it up at this time; both are ſufficiently felt and acknowledged: it will therefore ſuffice, that I briefly explain my intention in the following ſheets, ſubmitting it to the candid Public, whether the execution is anſwerable or not to the deſign.

I purpoſe *firſt* to give a diſtinct and accurate idea of the Anatomy of the Teeth, and the adjacent parts, to prevent as much as poſſible, thoſe accidents which ariſe from the ignorance of unſkilful practitioners in this point; who, unacquainted with the ſtructure of the parts, never fail to expoſe their patients to unneceſſary pain, and frequently to dangerous conſequences.

Secondly,

Secondly, To point out the more immediate Cauſes of the Diſeaſes of the Teeth; and to ſhew how they may be mitigated, and, in ſome meaſure, prevented.

And, *thirdly,* To introduce and recommend a more general attention than has hitherto prevailed, to the preſervation of the Teeth, ſo uſeful to the purpoſes of life, and ſo ornamental in that part of the Creation where Beauty ſeems to have fixed her peculiar ſeat.

A long, extenſive, and, I believe I may ſay, ſucceſsful practice, has enabled me to acquire the knowledge which I here pretend to communicate to the world. The ſubject is, in ſome degree, new in this country; I therefore hope for indulgence, and claim no abſolute merit, but in my intention. Whatever ſhare I may be further entitled to from the performance itſelf, depends entirely upon the judgment of the Reader to beſtow, and to whom I ſubmit it, without reſerve.

A
TREATISE
ON THE
TEETH:

Teeth are given us by Nature, in order to cut, break, and grind the neceſſary aliments, and to give a ſtronger and a more articulate ſound to the voice.

What is chiefly to be conſidered in the Teeth, is their texture, number, and figure; their exact order and arrangement, and the time they begin to appear.

In the Teeth we may diſtinguiſh three parts, namely, the body, or crown, of the Tooth, which appears out of the gums; the middle, comprehending the ſpace covered by the gums, and called the neck or collar of the Tooth; and laſtly, the root, which lies buried in the ſocket.

We find in a Tooth three different ſubſtances. The firſt ſurrounds and covers the body or crown of the Tooth; it is thin, but grows thicker by degrees, as it draws near to the extremity of the crown. This ſubſtance is ſo cloſe and hard, that no impreſſion, either with a file, or any other ſharp inſtrument, can be made on it but with great difficulty and trouble; its colour is that of a pearl white, almoſt peculiar to the Teeth.

This cortical ſubſtance is what we call the enamel, or vitreous part, and it forms itſelf before the Tooth comes out; it grows ſtronger and finer until the age of about twenty, after which time it begins to wear off, by continual uſe; and ſo liable is it to decay, that we often ſee perſons of a middle age without the leaſt enamel on their Teeth: ſuch a thing frequently happens in old people. But although the enamel be loſt, or deſtroyed, ſtill the Tooth is not ſo liable to decay as one may imagine; for we find many Teeth firm and ſound in their internal ſubſtance, notwithſtanding they have been deprived of their outward coat for many years: however, when once it is gone, the Tooth lies more expoſed to the impreſſion of heat and cold, and to be acted upon by any thing acid and ſharp: and, as for the enamel, the loſs of it can never be repaired.*

The ſecond ſubſtance is not ſo cloſe as the former, and conſequently leſs hard; it is of a duſky white colour, and of the ſame nature as that of all human bones, although ſomewhat harder: it begins immediately under the enamel, in the body of the Tooth, and covers the neck, together with the whole root.

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* Ruyſh, the anatomiſt, declared he could trace the arteries into the hardeſt part of the Teeth: Lewenhoeck believed the fibres of the enamel to be ſo many veſſels; Monro aſſerted he had frequently injected the veſſels of the Teeth in children, ſo that the inſide of the cortex appeared perfectly red.—But the ingenious Mr. John Hunter, and other late writers, are of opinion, that the enamel is not vaſcular, and that no injection can ever reach it.

The third is that which forms the internal part of the Teeth, and is called the BULB: it is ſoft in regard to the former, but very cloſe and firm, if we compare it to the marrow of the other bones.

The outward covering or enamel, and the bony part of the Tooth, are not ſuſceptible of the leaſt ſenſation.

The reaſon why Teeth are affected by ſomething acid or ſharp, is owing to a certain tremor that communicates, and, as it were, thrills through the nerve in the inward part. If this nerve is left uncovered by a caries of the bony ſubſtance, then we are tormented by the moſt excruciating pain.

Men at twenty, and about three years after, have generally twenty-eight Teeth, fourteen in each mandible, or jaw. This number encreaſes to thirty-two, when the four Teeth, called *dentes ſapientiæ*, appear; but as thoſe in ſome perſons come out ſooner, in others later, and in ſome never, we may juſtly ſay, that the number of Teeth, at a medium, is thirty. Some writers were formerly of opinion, that men had thirty two Teeth, and women twenty eight; but inſpection may plainly evince the abſurdity of this notion.

All the Teeth that exceed the number of thirty-two, may be reduced as ſupernumerary; they generally puſh out between the *inciſores*, or fore Teeth, of the upper jaw; and in ſuch caſe the *inciſores* are encreaſed in their number. Theſe ſupernumerary Teeth reſemble very much the lateral *inciſores* of the upper jaw. And it happens that the *inciſores* alſo of the lower jaw, and the *molares*, or grinders, themſelves, have been multiplied by intervening ſupernumerary Teeth.

Teeth are generally divided into three claſſes, viz. the *inciſores*, or cutting Teeth; the *canini*, or dog Teeth, and the *molares*, or grinders.*

The *inciſores* are eight in number; four in front of each mandible. They are called *inciſores*, becauſe their buſineſs is to cut the aliments; for which purpoſe their outward form, at the extremities, is peculiarly and wonderfully adapted. On the outer ſurface, next the lips, they are a little convex, and on that next the palate, concave. The two *inciſores* in the middle of the upper jaw are longer, and often broader than thoſe on each ſide, or any of the other *inciſores*; for indeed the lateral upper *inciſores* exceed the lower in magnitude. The two middle upper *inciſores* may be called the greater; thoſe on each ſide, the leſſer; and the four of the lower mandible, the ſmall *inciſores*. Theſe Teeth deſcribe a kind of ſemicircle.

The *canini* are four in number;† they lie one at each ſide next the *inciſores*, between them and the *molares*, in both jaws. Theſe Teeth are rather longer, more round, and leſs cutting than the *inciſores*. Their uſe is to part things that are of a ſolid nature; in regard to their ſtructure, they appear to be very proper, not only for cutting aſunder any piece of ſolid food, but alſo for keeping it firm in the time of maſtication. They are called *canini*, becauſe they are very like the Teeth of a dog. The upper *canini* are alſo known by the name of eye-teeth, becauſe it was anciently believed, that they had a kind of connection with the eyes, and that, by drawing any of them, the ſight was endangered; but daily experience has clearly demonſtrated, that ſuch a connection and danger are merely imaginary.

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* Mr. Hunter varies this diviſion. He retains the name of *inciſores* to the four fore Teeth; but he diſtinguiſhes the *canini* by the title of *cuſpidati*: the two next to theſe which have been called *molares* he names the *bicuſpides*, and allots the name of grinders only to the three laſt Teeth on each ſide. Vide Natural Hiſtory of the Teeth, page 42, *et ſeq.* by John Hunter, F. R. S. Surgeon-extraordinary to His Majeſty.

† The eminent practitioner, above quoted, remarks of theſe Teeth, that we may trace in them a ſimilarity in ſhape, ſituation, and uſe, from the moſt imperfectly carnivorous animal, which we believe to be that of the Human Species, to the Lion, which is the moſt perfectly carnivorous of the animal creation.

Immediately after theſe come the *molares*, or grinders. They are twenty in number, five on each ſide of both jaws. The two firſt in each row, or the neareſt to the *canini*, are the ſmall grinders, and the others the large. They are ſo called, becauſe they are thicker, blunter, and more flat at their extremities than the reſt. They operate like mill-ſtones, to bruiſe and grind the food. Their figures are almoſt ſquare. The broad end, or top of each grinder, is divided into ſeveral little eminences and cavities in ſuch a manner, that when the jaws ſhut, the eminences of the upper grinders are received into the cavities of the lower, and ſo *vice verſa*.

We cannot help admiring with aſtoniſhment the works of Providence, in the figure and exact diſpoſition of all the Teeth, which can never be too cloſely examined.

In order, therefore, to form a better idea of this admirable contrivance, it will be neceſſary to obſerve, that the lower jaw is a kind of lever, reſting itſelf at the extremity, where it joins by articulation to the temporal bones; the aliments are the reſiſting bodies, and the elevatory muſcles are the acting powers to overcome that reſiſtance, by raiſing the jaw.

The grinders, which are rather blunt, ſtand nearer the centre of the motion, and conſequently preſs more forcibly than the reſt; and this is the reaſon, that when we would bite ſomething remarkably hard, we generally place it between the *molares*; the *canini* and the *inciſores* can never act with ſo much force, being farther removed from the centre of motion, but their want of power is ſufficiently compenſated by their form.

In ſpeaking of the name and characteriſtical figure of the Teeth, enough has been ſaid concerning that part of the Teeth which appears out of the Gums, viz. the crown; therefore we ſhall proceed to their neck.

OF THE NECK OF THE TEETH.

The Neck is that part of the Tooth covered by the gums, and a bony ſubſtance, which, as we ſaid before, is of a duſky white colour. In that part of the neck which joins to the gums, we find ſome little inequalities, or rather wrinkles, that cauſe ſome ſmall veſſels, belonging to the gums, to adhere more cloſely to it: by this means, not only ſaline particles are prevented from getting into the ſockets, but the Tooth is alſo rendered ſo firm and ſtrong, as to ſecure it from being ſhook or looſened.

OF THE ROOT.

The Root is that part which is buried in the ſocket, a continuation of the ſame ſubſtance and colour with that of the neck. It is covered by a membrane exactly ſimilar to that which lines the ſocket.—The root of each Tooth is generally longer than the body, and is thereby rendered more able to bear any ſtrain or violent impreſſion, occaſioned ſometimes by chewing, gnawing, or breaking bodies of a hard nature.

In every root we find, towards the extremity, a little hole, which is a paſſage to the internal ſubſtance, or the bulb of the Tooth.

There is alſo a little branch of an artery, a ſmall vein, and a nervous filament. This hole is cloſed up in old age, and then Teeth loſe their ſenſation. Various are the figures of roots, and in each ſpecies of Teeth there is a particular one.

In all the *inciſores* there is but one root to each Tooth, which decreaſes gradually, and ends at laſt in a point. The *canini* likewiſe have generally but one root; but there are ſome with two, quite divided through all their extent, and others only at the extremities; ſuch Teeth, however, are very uncommon. The ſide of the roots of the *inciſores* and the *canini* are flat, and reſt upon the partition of each ſocket: which mechaniſm fixes more firmly theſe Teeth in their ſockets: their necks and bodies being alſo flat laterally, and applied to the contiguous Teeth, they receive mutually a ſtrong and conſiderable ſupport, by being ſo well adapted to each other. The ſmall grinders, namely, thoſe that come immediately after the *canini*, on each ſide of both jaws, have generally but one root; ſome are found with two, and ſome even with three; but ſuch a caſe is very rare. The ſmall grinders, that have but one root, have it always flat on the ſides, and therefore it ſupports itſelf in the ſame manner as the *inciſores* and the *canini*.

The number of roots in the large *molares*, both in the upper and lower jaw, is very uncertain. There are ſome large grinders, with one or two flat roots, and each root ſeems to be formed out of two joined together, diſtinguiſhed only by a little kind of channel, which riſes immediately from the crown of the Teeth, and appears through all their extent, in order to mark out the diviſion. In other large grinders, there are three, four, and ſometimes five roots, quite ſeparate from one another, extending themſelves in a large compaſs; for which reaſon ſuch Teeth are deeply rooted, and ſtick more cloſely to the ſocket. Hence it happens, that the *molares* are not ſo eaſily drawn out of their ſocket, whenever the adjoining Tooth is wanting.

The laſt grinders, otherwiſe called the *dentes ſapientiæ*, have fewer roots than the two Teeth that precede them, and their body is not ſo thick. They have generally but two roots joined to each other, which very ſeldom appear ſeparate in all their extent, or even at their extremities; there have been ſome, notwithſtanding, with three, four, and even five roots, very plainly divided one from another; but this caſe is very rare.

The crown or body of theſe Teeth is almoſt all covered by the gums. Sometimes the roots of the large grinders are crookedly inclined towards the internal part of the ſocket, and ſometimes towards the external. Some are in an undulating form, and ſome are bent one againſt the other, or laid acroſs altogether, and therefore it is a very difficult taſk to draw a Tooth of this kind. For if ever one of theſe roots bend with a point quite oppoſite to another root that may be lodged in the little cell of the next ſocket, then theſe two roots will form, as it were, a pair of pincers, and gripe with their extremities the bony ſubſtance that parts one cell from another; and conſequently, in drawing a Tooth with thoſe roots, we are forced either to tear the bony partitions of the cells, or if this ſhould reſiſt, then either one or the other, and ſometimes both theſe crooked extremities muſt break; and in both caſes it may be of very bad conſequence. There is alſo great danger in drawing the upper *molares*, leſt you ſhould tear with the Tooth the bottom of the ſocket, together with a very thin bony *lamina* or ſcale that parts it from a cavity, called the *maxillary ſinus*; for then the mucous membrane is unluckily torn; and this gives occaſion for inflammations and ulcers in that membrane, and may even produce a cancerous ulcer, as it has happened in many caſes.

Every root has a hole that communicates with the cavity in the middle of the crown; which cavity in the grinders is divided into as many ſmall *ſinuſes* as there are little eminences on the baſe, which is lined with a membrane that ſerves as a ſheath to the ſmall blood veſſels and nerves, that are included in the internal part of the Tooth. At the extremity of each root there is, as we ſaid before, one or more little holes that receive nerves, blood veſſels, and perhaps abſorbent veſſels, which by their connection together, form what we call the chord of the Tooth. This chord paſſes through the cavity of the root, and conveys a proper nouriſhment to the ſubſtance of the Tooth; and as it draws nearer the crown it becomes thicker, by means of the membrane that lines the cavity.

The *inciſores* and *canini* have their nerves from a branch of the fifth pair, called the upper maxillary, which inſinuates itſelf into the orbital canal, from whence it comes out, to be diſtributed on the face, and in its way ſends off filaments for all the roots of theſe Teeth.

The *molares* likewiſe receive their nerves from the ſame branch through ſmall holes, formed in the hinder part of external lateral ſurface of the upper maxillary bone.

The veins and arteries, as they always join with the nerves, communicate themſelves in the ſame way to the Teeth. Theſe arteries are branches of the external carotids and the veins of the jugular.

The nerves of the lower jaw are from another branch of the fifth pair, called the inferior maxillary, which enters into a canal on the inſide of the angle of the lower jaw, and is continued on each ſide to the chin, a little below the roots of the Teeth. In paſſing along this bony canal, the nerve ſends off filaments to the roots of each of the *molares* and *canini*, and is then divided into two branches, one of which comes out of a hole of the bone in the chin, called the mental hole, to be then diſtributed to the chin and muſcles of the under lip.

The other branch paſſes on to the ſymphyſis of the lower jaw, and is diſtributed to the roots of the *inciſores* and *diploe* of the bone.—The arteries which are ſent to the Teeth of this mandible have their riſe from the external carotid, and follow preciſely the courſe of the nerve through this bony canal, accompanying it through the whole of its diſtribution. The veins ariſe from the external jugular.

It therefore appears, from what has been ſaid on this ſubject, that a tooth-ach in the *molares*, or grinders, muſt be more exquiſitely painful than in any of the other Teeth;

for as the *molares* are furniſhed with a greater number of roots, and each root has its artery, vein, and nerve, it therefore follows, that a Tooth of five roots muſt have fifteen ſenſitive bodies; which, if expoſed to heat and cold, by a caries of the bony matter, will, *cæteris paribus*, produce a greater quantity of pain, than that of a Tooth with a ſingle root.

OF THE SOCKETS.

The ſockets are cavities formed in the jaw-bones, for the receiving and fixing the Teeth; but theſe will be better underſtood by giving a previous idea of the mandibles in general, which have ſo great a ſhare in forming the countenance; for if the Teeth be wanting in either jaw, the lower will be brought ſo much the nearer to the upper, by the ſtrong action of the temporal muſcles, as to make the chin and noſe approximate one another, and ſpoil the beauty and ſymmetry of the face.

The mandibles may be conſidered as two bony arches, lying parallel to each other; the lower jaw moving on its condyles, and the upper, which is properly compoſed of two bones that are firmly united before, and along the palate, ſo as to form a conſiderable part of that bony arch. This mandible is firmly attached to the other bones of the face: it has a cavity on each ſide, directly above the roots of the grinders, which is ſometimes opened by drawing Teeth with long roots, that have pierced into it.

The lower jaw is likewiſe compoſed of two bones, eſpecially in the infant ſtate; which are firmly united at the ſymphyſis of the chin, ſo as to make but one bone in adults. This bone is remarkably hard in the lower part, although ſomewhat ſpungy on its upper, in order to afford a more convenient bed for the Teeth: it has no cavity, ſave the alveolary canal, which runs under the roots of the Teeth, and tranſmits to them their blood veſſels and nerves.

After this general idea of the ſtructure of the mandibles, we ſhall now treat of Sockets in particular; which are cavities formed by the Teeth in the diploe, or ſpungy ſubſtance of the jaw bones, divided into as many little *foſſulæ* as there are roots of each Tooth. Theſe little cavities are lined with a thin, elaſtic, ſcaly ſubſtance, not ſo hard as the other parts of the bone, and ſufficiently pliable to become a perfect mould for the Teeth, which, in caſes of violent compreſſion or ſhocks, gives way, ſo as to prevent, in ſome meaſure, the Teeth from being looſened or broke.

We do not find in the jaws of infants the ſockets entirely formed; at leaſt they do not appear ſo; for there are but ten or twelve in each mandible, and theſe not deep: all the ſockets in thickneſs are not alike, for each ſpecies of Teeth have their particular ones.

The *inciſores* of the upper jaw have their Sockets thinner than thoſe of the other Teeth, and the *canini* have theirs ſtronger, conſequently thicker than the *inciſores*, or even the ſmall *molares*. The firſt large grinder has its Socket ſtronger than the ſecond, and laſt grinder.

In the *inciſores* of the lower jaw we find their Sockets thinner than in all other Teeth of that mandible; and this is the reaſon that thoſe Teeth are more liable to ſhocks, and it is likewiſe eaſier to draw them. The *canini* have their Sockets thicker than the *inciſores*, and the ſmall grinders; but the ſmall grinders have theirs thicker than the *inciſores* of this jaw. The firſt large one of the *molares* has not the ſocket ſo thick as the ſecond and third; which laſt one has it thicker, becauſe of the *apophyſis coronoide*; and that is the reaſon why it proves generally very difficult to draw.

Theſe Sockets, when Teeth are drawn, or naturally fail, are generally deſtroyed in a very ſhort time, inſomuch that it is almoſt impoſſible to perceive any marks of them, as we daily ſee in examining the mandibles. But if ever, in drawing a Tooth, ſome part of the Socket was to be torn, then the ſides would be found not quite ſo thick, nor ſo firmly joined in that place. The Sockets are outwardly covered, and lined inwardly, with a membrane, or perioſteum, common with the root of the Tooth: it is a continuation of the perioſteum that covers the other bones, and of the ſame membrane that lines the internal part of the mouth.

OF THE GUMS.

The fleſhy part that ſurrounds the Socket, is called the Gums; theſe are made of a hard ſubſtance, rather fibrous than glandular. They are penetrated and moiſtened by different veſſels, namely, by veins, arteries, and lymphatics. The texture of the Gums is of a coriaceous nature, with fibres interwoven like a hat's felt, very cloſe and elaſtic, of a pale vermillion colour; all the border of the Sockets, in both inward and outward ſide of the jaw, is covered by the Gums, which inſinuate between all the Teeth, and adhere ſo cloſely to the neck of each of them, as to prevent any hing acid or ſharp from touching the Sockets. Before the Teeth come out, the Gums are all of a body, without the leaſt ſeparation; and as the Teeth begin to ſhoot out, they pierce the Gums, and make ſo many holes as there are Teeth in the mandibles.

The Gums are joined to the jaws by the perioſteum, which they every where cover. The outward covering of the Gums extends itſelf from the crown or body of the Teeth over the cheeks and lips, and ſeems in every reſpect to be a continuation of the ſame membrane.

The inward Gums of the upper jaw go from the internal part of the neck of the Teeth, as far as the circumference of the roof of the palate; and thoſe of the lower mandible, as far as the circumference of the baſis of the tongue.

When a Tooth happens to fail, the Gum covers the orifice of the ſocket, which being ſoon ſhut up or deſtroyed, the external part of the Gum joins with the internal one, and they unite themſelves very cloſely together, becoming ſo hard and firm a body, that we ſee men, who, after having loſt all their Teeth, bruiſe the aliment with their Gums, although they cannot cut or mince with them: in this caſe the Gums re-aſſume the very ſame figure they had before the Teeth appeared.

The Gums, no doubt, are preſervers of the Teeth, ſince they keep them quite firm in their ſockets, and ſave them from being touched by any thing heterogeneous or pernicious, which might produce the moſt painful diſorders in the Teeth, even to a total deſtruction of them.

The Gums, when properly ranged, contribute very much to the ornament of the mouth; for, as theſe are of a vermilion caſt, and form a kind of a creſcent, or half moon, around the enamel of each Tooth, they ſet off, in a more elegant manner, the whiteneſs of the Teeth, when we have occaſion to ſhew them by laughing, ſinging, &c.

OF THE GENERATION OF TEETH.

Nature, in forming theſe bones, ſeems to deviate entirely from thoſe laws that ſhe has eſtabliſhed in the production of all other bodies, and to chooſe a peculiar and uncommon method in this generation.

Natural productions moſt generally have their beginning in their roots; but a Tooth, on the contrary, does not begin to form its root till the body is perfectly finiſhed. The firſt ſubſtance that begins to appear in this body is not the internal part, as one would imagine, but the external one, the fartheſt from the root, and what is called enamel. This ſubſtance, in its beginning, is nothing but a mucous, ſoft paſte, which acquires inſenſibly ſo much firmneſs, that it becomes at laſt a bony part, and excels all other bones, (as we have ſhewn in its proper place) in point of hardneſs and whiteneſs. When once this ſcale or bony coat is formed, the Tooth aſſumes directly a proper figure, and its inward part begins to be filled.

The germ of the Teeth, like that of other bones before oſſification, is compoſed of a taſſellated mucous, ſeparated and divided into a number of little cells, which are afterwards filled up with calcareous or bony matter, and this conſtitutes the ſolidity of the bone. This germ is contained in little lodges, or cells, of the ſocket, which it ſtretches in proportion as the bulk of the Tooth augments and ſpreads; at the ſame time its membrane increaſes, and takes hold of the roots, and forms the perioſteum that ſurrounds it.

The body of the Tooth being quite finiſhed, the root takes then its due form; and, as it grows ſtronger, it lengthens by degrees, until it becomes of a proper length: the extremities grow firm and bony, leaving, however, a free paſſage to the veſſels that run through the cavity of its root, and penetrate with their nouriſhing juices to the very inward body of the Tooth. While the root grows thicker and ſtronger, finiſhing itſelf within the ſocket, the body of the Tooth riſes towards the gum, and attempts to come out It begins by dilating the partitions of the ſocket; and, being level with this bony border, it cuts immediately the membrane in which it is encloſed, then the other membrane that covers the ſocket, and at the laſt the gum. In this manner ſhoot forth the Teeth.

The partitions of the ſockets will lengthen in proportion as the Teeth draw nearer the gums; but, although in lengthening they are compreſſed, and grow harder, ſtill they have an elaſticity, by which they render the Teeth ſafer and ſtronger againſt the impreſſions of any accident.

The ſame economy we find in the *molares*, that are furniſhed with more roots, and conſequently have more cells in their ſockets, which always multiply at the ſame time, when the roots appear, as was ſaid before. It would be natural to think, that, in thoſe Teeth that have but one root, their ſockets ſhould be found greater in diameter than the root itſelf, as the ſocket has taken the form and figure of the body of the Tooth, which is firſt of all formed in it, and is always of a larger diameter than the root; but it is never ſo, on account of the above-mentioned elaſtic force belonging to the partition of the ſocket, inſomuch, that, as ſoon as the body of the Tooth is out of the ſocket, the ſocket contracts, and adapts itſelf, by degrees, to the figure of the roots, holding the Tooth as firm as if it were fixed in a vice or ſcrew.

OF THE ERUPTION OF THE TEETH.

Children, when they are brought into the world, have generally no Teeth; I ſay generally, becauſe ſome have been found with two, three, and even four *inciſores*; two in the upper jaw, and two in the lower one: but theſe caſes are only exceptions to the general rule.

Teeth appear ſooner or later, according to the weaker or ſtronger conſtitution of the child. There have been ſome of them who have cut their Teeth when they were two or three months old, and ſometimes not before they were a year or fifteen months; but, with the generality, in the fifth, ſixth, or eighth month after their birth, the firſt Tooth begins to appear. The two ſmall *inciſores* of the lower jaw are the firſt that come out.

The large *inciſores* of the upper jaw appear almoſt at the ſame time; then two appear in the lower jaw, at the ſide of the former; and then two other in the upper jaw: this is the general order in which the *inciſores* are ſeen. When the child is eleven months, or a year old, the lower *canini* appear almoſt always at the ſame time; and a few days after, the upper *canini* likewiſe ſhoot forth together, and theſe cauſe greater pain than the former.

When children are about ſixteen or twenty months old, the two ſmall lower grinders come out; and, in a few days after, the two other of the upper jaw: the other four *molares* do not generally appear until the child is two years old, the one at each ſide of the mandibles. Theſe make twenty in number, and are called Milk-Teeth; the child remaining in this ſituation till about the ſixth year of its age.

The order which we have here deſcribed is not always exact; for, we often ſee the ſmall grinders ſhoot forth ſooner than the *canini*, and the *canini* more quickly than the lateral *inciſores*. At the age of five or ſix years, the other four *molares* appear next to thoſe lately come out in each mandible. Towards the eleventh or twelfth year, four other *molares* come out, in the ſame order, as do likewiſe four in the ſeventeenth or eighteenth, which in all make twenty-eight, *viz*. eight *inciſores*, or fore-teeth; four *canini*; and ſixteen *molares*, or grinders. With theſe Teeth, we generally continue, until the four laſt *molares* (called *dentes ſapientiæ)* appear, the exact time of which is very uncertain, though uſually it happens at the age of twenty-five, or even twenty-eight: nor are there inſtances wanting, of their not appearing before the age of fifty, when they are, for the moſt part, accompanied with tumours and defluxions on the neighbouring parts, which proceeds from the preſſure cauſed by the crown of the Tooth on the ſides of the ſocket, and on the fleſhy and membraneous point of the gum, which at that time of life is become more hard and obdurate. At the age of ſeven or eight years, the *inciſores*, the *canini*, and the ſmall *molares*, are ſhed in the ſame order as they firſt appeared. When theſe are gone, as many ſtronger and more beautiful Teeth take their place.

It is remarkable, that if one of the Milk-Teeth be drawn before it is looſe, we find in it a root as firm as that of the ſecond Tooth; but, on the contrary, if it is drawn when it is looſe, there is no root at all. This has given riſe to a variety of opinions concerning the deſtination, or rather deſtruction, of the roots of the Milk-Teeth. It is imagined by ſome, that they are intirely conſumed by a flux of acid humours, which abſorb the calcareous matter of the roots, and ſo decompoſe the conſtituent parts; while others ſuppoſe that theſe roots are incorporated into the ſubſtance of the ſecond Teeth. But, as theſe ſuggestions are not ſupported by the leaſt appearance of fact, we ſhall not, therefore, take up the time of the reader, to prove the contrary, but ſhall only obſerve, that ſuch an acid humour could not exiſt, without deſtroying all the Teeth; and that ſuch an incorporation into the ſubſtance of the ſecond Tooth has never yet been found. It appears by ſeveral of the later diſcoveries made in anatomy, that many parts neceſſary to the body, in the embryo and infant ſtate, are totally loſt and obliterated in that of adults; and that thoſe parts, which are become uſeleſs and redundant in the ſyſtem, are abſorbed, and taken up by the lymphatic veſſels, to be afterwards thrown out at the different emunctories of the body. That this is in reality the caſe with the roots of the Milk-Teeth, may be fully aſcertained by a variety of ſimilar facts, which the nature of this work will not admit us to enumerate.

Sometimes, though ſeldom, the large *molares*, and even the *dentes ſapientiæ*, will ſhed, as happened lately to a lady who was tortured with the moſt exquiſite pain in one of the *dentes ſapientiæ*, on the right ſide of the lower jaw. I felt the Tooth quite looſe, which I drew with my fingers, but found no root to it. This I concluded to be owing to another Tooth lying under it; which I ſoon perceived, on further examining of the ſocket. As the excruciating pain ſtill continued, the lady could not be perſuaded that there was another Tooth to come out, but that the root of the former was left behind; however, the appearance of a new Tooth, not long after, fully convinced her that the pain was intirely owing to the ſmallneſs and firmneſs of the ſocket, which retarded the egreſs of the young Tooth, and obliged it in a manner to grind its paſſage out.

An opinion prevails, that there is a very great riſk in drawing Milk-Teeth, before they are looſe; but, in reality, there is not the ſmalleſt danger. And, indeed, when they are carious, or in any other way painful, it is abſolutely neceſſary to draw them, to prevent, as much as poſſible, an inflammation of the gums and adjoining parts, which might deſtroy the germ of the ſecond Tooth.

It is ſometimes neceſſary to draw thoſe Teeth that lie acroſs, or ride upon one another (a very diſagreeable ſight) in order to give a more exact and uniform arrangement to the reſt. This defect of order, in the *canini* and *inciſores*, in general, proceeds from an extreme narrowneſs of the jaws. But the operator muſt be very circumſpect, in examining every circumſtance relative to the Tooth and ſocket, before he draws a Milk-Tooth; for if a part of the ſocket ſhould be broke, and give way, the ſecond Tooth will always come out in an irregular manner.

DISORDERS INCIDENT TO CHILDREN IN TEETHING, AND THE MANNER OF TREATING THEM.

The eruption of Teeth, in Children, is often attended with the moſt fatal conſequences, by exciting fevers, convulſions, gripes in the inteſtines, acidities in the ſtomach, and, finally, by introducing a great degree of irritability in their tender conſtitutions, ſo that they become more liable to a greater variety of diſorders.

Children ſuffer in teething; firſt, in proportion to the delicacy and ſenſibility of their conſtitutions; ſecondly, to the number and figure of the Teeth that puſh out at the ſame time; thirdly, to the ſtate of the gums, which in ſome children is found to be more tenſe, and liable to inflammation, than in others.

Children who are originally of a delicate habit, or who have been rendered ſo by milk of an improper quality, or by any other cauſe that impairs their digeſtion, and produces acidities in their ſtomach and inteſtines, are extremely liable to convulſions in teething. On the contrary, children of a ſtrong, robuſt make, whoſe food is converted into proper nouriſhment, are leſs ſubject to convulſive diſorders, but are liable often to a degree of fever, which, in ſome meaſure, facilitates the eruption of the Teeth. The number and figure of the Teeth that ſhoot out at once, will greatly increaſe the pain; for, the blunt flat *molares* will meet with a much greater reſiſtance, and a greater degree of laceration, than the ſharp-pointed *inciſores* or *canini.*

At the ſame time, the *canini* will prolong the pain, from their wedge-like figure, which is continually dilating the ſocket and gum, till the Tooth has completed its growth.

From this great difficulty the Teeth have to cut the gums, many miſchiefs are frequently produced; for, as inflammation is always the conſequence of laceration and preſſure, by its going too far, it frequently occaſions ſwelled glands about the throat and neck, which ſometimes ſuppurate: and even ulcers in the gums and neighbouring parts have been produced. In order to mitigate, and in ſome meaſure prevent, the diſorders ariſing from teething, it will be neceſſary to conſider well what has been already ſaid in regard to the tendency of nature to inflammation, in ſtrong and robuſt children, and to convulſions, gripes, and looſeneſs, in the weak, tender, and delicate. In the firſt caſe, the degree of fever and inflammation may be lowered, by keeping the nurſe upon a low diet, avoiding animal food, ſpices, or whatever tends to ſtimulate and increaſe the circulation: frequent, but ſmall doſes of rhubarb ought to be adminiſtered to the nurſe, which will gently purge the child in the ſafeſt and moſt commodious manner. In the mean time, if the gums are much ſwelled, ſcarifying them with the point of a lancet, ſo as to make them bleed at ſeveral parts, will empty the diſtended veſſels, and remove the tenſion from the inflamed gums; and, where the fever runs high, bleeding, with leeches or the lancet, will be of great ſervice.

In the other caſe, where convulſions are ſo often the conſequence, we muſt endeavour to prevent theſe frightful ſymptoms, by every method that may tend to ſtrengthen and confirm the conſtitution; ſuch as having a ſtrong and healthy nurſe, taking care that ſhe lives on the moſt ſimple and nouriſhing food, giving the child a wholeſome country air, with a good deal of exerciſe, and exhibiting ſmall doſes of aromatic infuſions of the bark, powder of tin, or ſuch like.

Where a looſeneſs and gripes prevail, it becomes neceſſary to take every method to prevent that tendency to acidity which moſtly takes place in infants, whenever digeſtion is any way diſturbed. This is beſt done by giving frequent but ſmall doſes of the abſorbent powders, conjoined with aromatics, and perhaps, rhubarb, or more aſtringent ſimples, with opiates, may be found neceſſary.

In Children of relaxed habits, whoſe gums are looſe and flabby, there is very little tendency to inflammation. In that caſe, applying mild aſtringents (ſuch as a decoction of roſe-buds, in vinegar) to the gums, by the nurſe's finger, will help greatly to brace up, and facilitate the eruption of the Tooth. But in all caſes where the ſymptoms are troubleſome, and the Tooth tardy in coming out, the only effectual means is to make a free exit for it by inciſion, and to cut the gum quite down to the Tooth. And, indeed, wherever a Tooth ſeems ready to appear, and the child is pining and ſuffering much, we ought to recur immediately to inciſion, and in that way remove the pain that is occaſioned by the diſtraction of ſuch ſenſitive parts.

Sometimes, where the gum has been already cut, and the Teeth very ſlow in growing, the parts unite, and a cicatrix is formed above it: here we ſhould again cut the gum, ſo as to lay the Tooth quite bare.

In ſome ſtrong and healthy children, a number of Teeth will puſh out at the ſame time; by which means the ſymptoms are greatly aggravated: here, alſo, we ſhould give a free exit by inciſion, then gentle emollients ſhould be applied to the gums, and every thing that is irritating ſhould be avoided.

Particular attention ſhould be paid to the leaſt ſore or ulcer that may be formed about theſe parts, leſt they deſtroy the germ of the ſubſequent Tooth.

OF THE DISORDERS OF THE TEETH.

The Teeth are ſubject to a variety of diſorders, which may be divided into thoſe ariſing from internal or external cauſes. The firſt have their riſe from the juices being contaminated by ſcurvy, ſcrofula, venereal infection, or whatever induces a cachexy of the humours.

Alſo it is obſerved, that women are more liable to toothachs and fluxions upon the gums, during the time of pregnancy, than at any other; perhaps from the particular ſympathy of nerves, that is ſo peculiarly ſhewn upon the ſtomach, &c. at that period.

All diſorders in the gums infect the Teeth, and are the cauſe of long and painful ſuffering. Teeth generally fail by ſome of the above cauſes.

The external cauſes are alſo many. The general ones are:—the uſe of aliments too hot or too cold; the different impreſſion of air; all ſhocks given to the Teeth, which affect the nerves; the vapours that ariſe from the ſtomach and lungs, and leave a noxious and diſagreeable ſlime on the Teeth; any particles of food that ſtick between the Teeth and putrify; keeping the head uncovered, and expoſed to the air; ſleeping bare-headed; as, likewiſe, the exceſſive uſe of ſmoking and chewing tobacco; the many improper remedies, alſo, that are made uſe of to keep the Teeth clean; and the cauſtics, applied in order to mitigate the pain, are always ſure to deſtroy thoſe they unluckily touch. Hence we may ſee of what importance it is, never to make uſe of any remedies but what are approved of by a ſkilful perſon. Sugar, when uſed immoderately, is another enemy to the Teeth; but one of the moſt dreadful deſtroyers is mercury; one ought, therefore, to be extremely cautious in uſing it. All mineral exhalations are alſo very pernicious, as we ſee, by daily experience, in all thoſe perſons who work in any of the quickſilver, lead, or copper mines, &c.

Such people generally have their Teeth corroded, diveſted of their enamel, and ſometimes intirely waſted away by the corroſive particles exhaling from thoſe minerals. Among the external cauſes, however, negligence may be reckoned the firſt; for let the lymph be ever ſo pure, and digeſtion ever ſo regular, there are always ſome viſcid exhalations that are apt to ſettle upon the Teeth: theſe can eaſily be removed, but if neglected, may prove the cauſe of many miſchievous diſorders as we ſhall ſhew hereafter.

It is not my intention to give my reader a liſt (as many have done) of the various diſorders incident to the Teeth, but to comprehend them under two ſingle articles, namely, *eroſion* and *caries*. And I ſhall take notice, likewiſe, of what is commonly called the *tartar*.

Eroſion is a diſorder that renders the Teeth rough, and worm-eaten: it affects only children, either when the firſt Teeth ſhoot forth, or when the ſecond ones appear. The original cauſes of theſe diſorders are, the ſmall-pox, the meaſles, and all thoſe diſorders that contaminate the juices. It penetrates, more or leſs, according to the hardneſs and firmneſs of the Teeth; and therefore, if the diſeaſe ſhould ſeize the child when its Teeth are not ſufficiently firm and oſſified, it muſt be attended with bad conſequences, meeting with little reſiſtance in the parts not ſufficiently oſſified.

But if it ſhould come on when the Milk-Teeth are ſhedding, and the new ones appear, it will be of no harm to the Tooth that has not as yet come out.

Whenever this diſorder appears, it can only be of detriment to the parts that are not ſufficiently firm and oſſified.

Children that are affected *in utero* with the ſcurvy, the venereal diſeaſe, &c. will bring along with them the ſeeds of thoſe diſorders, ſo pernicious to the Teeth, if proper means are not made uſe of to prevent it. But if the original cauſes ſhall be thoroughly eradicated, the Milk-Teeth will only ſuffer, and thoſe that ſucceed them will be found quite untouched.

In order to purify the conſtitutions of ſuch children, it will be neceſſary to make uſe of thoſe means which are proper to produce a good chyle, and to correct the ſtate of the juices, which is the province of the phyſician.

It is neceſſary, likewiſe, to chooſe a good nurſe, whoſe milk is not thick, for then it is not ſo eaſily aſſimilated by the infantile powers; nor too ſerous, for then it wants the proper ſubſtance, ſo neceſſary to form a good nutricious juice, the want of which prevents bones from growing in their natural form.

The child ſhould be kept in a good and pure air, and all occaſions taken to give it due exerciſe in the arms of the nurſe, &c. Theſe are precautions that will prevent this diſorder from affecting children. It is worth obſerving, that if the eroſion happens to come after the child is weaned, that is to ſay, when it is from two to ſix years of age, a methodical way of living, proper food, and good air, will be the means of preventing it. Many have thought, without reaſon, that this diſorder could affect nothing but the body of the Tooth, and that the root was not ſuſceptible of it. It is true that the roots do not appear ſo rough and worm-eaten as the body of the Tooth, but ſtill they are ſhorter, more crooked, and of an imperfect form, which they could never get but from this tendency of the humours to eroſion, or from the rickets, which is a diſeaſe ſo fatal to children, and proceeds from the ſame cauſes as the eroſion: it alſo proves very pernicious to the Teeth, and all other bones.

OF THE CARIES.

As ſoon as the Teeth make their appearance, the Caries begin to attack them, and conſequently, they ſtand in need of proper aſſiſtance. One ſhould think that their hardneſs would render them leſs ſuſceptible of it, but they are even more ſubject to a Caries than all other bones: it is eaſy, however, to trace the cauſes of it. As Teeth are of a cloſer texture, their veſſels are more compreſſed, and therefore, obſtructions are more eaſily occaſioned: and alſo when cold happens to ſtrike them to a certain degree, or when the bony fibres ſuffer by ſome extraordinary effort. If the juices that circulate through the ſmall channels of the Teeth are too thick, or are any way vitiated, the Teeth will thereby be more liable to be contaminated; but always in proportion to the impreſſions they ſhall receive.

Teeth that have been affected with the eroſion at the ſame time they were forming, are more ſubject to be carious, on account of the bad condition of their veſſels; and, therefore, are with more difficulty preſerved.

Various are the ſpecies of Caries: almoſt every part of the Teeth is affected by it, and both internal and external cauſes produce it. A Caries may be divided into ſoft, ſuperficial, deep and dry: it attacks the root, the neck, or the crown of the Teeth. The Caries that proceeds from internal cauſes, namely, the ſcurvy, &c. generally affects the root of the Tooth, often the internal ſurface, ſometimes the external, and even the inward cavity of the body.

Such a Caries is more difficult to be known than that which proceeds from external cauſes, chiefly when it attacks the root or neck of the Tooth; for, as the former is buried in the ſockets, and the latter is covered by the gums, one cannot perceive it: and therefore, we can only conjecture that there is a Caries, from the torturing pains that are produced. But theſe conjectures are often falſe, for the pain may proceed from ſome irritation affecting the chord of the Tooth, or the perioſteum that covers and lines the root. The conſequences, therefore, ariſing from this ſort of Caries, are very bad; for it is moſtly neceſſary to draw the Tooth itſelf.

The Caries that proceeds from external cauſes is viſible; and conſequently, by admitting of the neceſſary operations, more eaſily removed. A Caries, the longer it is allowed to run on, the deeper it goes, and is, therefore, the more difficult to cure.

The ſoft and dry Caries are not dangerous, if their progreſs is quickly and properly ſtopped.

Every Caries of the Teeth is more or leſs difficult to be eradicated, according to the part it affects, as that renders the operation more or leſs dificult. Although Teeth begin to be affected with the Caries as ſoon as they appear, ſtill it muſt be allowed, that the time, in which they are more ſubject to it, is from twenty-five to fifty years of age. It is worth remarking, that when a Tooth is affected by the Caries, on that ſide which reſts on another Tooth, it alſo affects the contiguous one; from which we may argue, that the particles exhaling from the carious Tooth muſt be corroſive. This happens not only in the lateral, but alſo in the oppoſite Teeth; for, when a Caries appears on the upper ſurface of a Tooth, it is then applied to the ſurface oppoſite, and in the ſame manner affects it, as is particularly ſeen in the *molares*.

The Caries ſometimes proceeds from fractures in the Teeth, but is generally cauſed by falls, and from violent efforts in breaking ſomething, of a hard nature, with the Teeth. The fractured Tooth can never be repaired; however, it ought not to be neglected, but carefully examined, as it requires the greateſt aſſiſtance of art; for the Tooth has ſometimes, in the fractured part, ſmall cutting points that will be of great detriment to the tongue, and be the cauſe of very painful and dangerous wounds: therefore, they muſt be immediately taken off, to prevent miſchief to the tender parts that they touch.

Whenever the Caries appears, it muſt be opened, by a maſterly hand, to the very bottom. If in ſo doing, the chord of the Tooth is diſcovered, the operation will prove very painful: but ſtill it muſt be deſtroyed, either with an inſtrument, the actual cautery, or ſome cauſtic liquor. We ought to be very attentive in the operation: for, if we do not utterly deſtroy the ſaid chord, but only prick it, the moſt raging pains will ſucceed, together with an inflammation, and the inevitable neceſſity of drawing the Tooth.

Such a cure cannot but be very torturing; for, not only the ſenſitive parts of the Tooth are to be expoſed to the impreſſion of the air, but alſo to be touched with an inſtrument, ſo as to be deſtroyed. The ſkilful operator muſt endeavour to aſſuage the pain of his patient, by the aſſiſtance of medicine.

When a Tooth, by the loſs of its chord, is become inſenſible, it muſt be filled with lead, or gold, in order to prevent any acid or ſaline particles from getting through the hole, where the chord went into the ſocket, to hurt its delicate membrane; for then there could be no means of redreſs, by drawing the Tooth: hence, all the care that had been taken, and all the pain that had been endured, to render the Tooth inſenſible, would then be of no avail.

OF THE TARTAR.

We ſhall now proceed to treat of what is commonly called the *Tartar.* From whatever occaſional or ſecondary cauſe the Tartar proceeds, the principal one is certainly negligence. It hath been called, by ſome, a cancer, becauſe it corrodes the gums and the ſocket in ſuch a manner, that the Teeth will fall out, for want of ſupport. It is generated by the fragments of aliments that ſtick to the Teeth, by a vitiated ſaliva, or by an imperfect digeſtion, &c.

Whenever this viſcid matter is allowed to ſtick to the Teeth, it grows hard, and degenerates into Tartar, and will augment by degrees, from new particles of aliments continually joining the old ones. But this would never happen, if the Teeth were carefully cleaned every morning, with ſomething proper for that purpoſe. This Tartar is a kind of cruſt, not only diſagreeable to the eye, but alſo productive of very fœtid exhalations.

There are various ſorts of Tartar, *viz.* the yellow, the whitiſh, the black, and even the green Tartar, which is the moſt pernicious, as it often deſtroys the enamel. The lower *inciſores* are more ſubject to the Tartar, chiefly in their internal ſide, becauſe of their vicinity to the tongue, and of the ſaliva, which runs moſtly that way. Although perſons grown in years are generally more liable to be troubled with the Tartar, yet we frequently ſee the Teeth of young people all covered with it.

Whatever is the cauſe that produces this Tartar, or whatever the time of its appearance, it ought to be removed as ſoon as poſſible, otherwiſe, the gums, by the compreſſion, will ſwell, and obſtruct the regular courſe of the fluids through the lymphatic and blood veſſels, which will, therefore, be liable to putrify, and deſtroy, in a ſhort time, the gum, the ſocket, and the perioſteum of the root.

This is the reaſon why Teeth grow looſe and painful.—If you were, even then, to cut off this heterogeneous body, it would be too late to hinder the loſs of the Tooth, which is now left without any ſupport from the gums, the perioſteum, and the ſockets.

The Tartar, ſometimes, is even thicker than the body of the Tooth, to which it ſticks ſo cloſe that they ſeem to form one ſingle body; therefore, it requires a dexterous and ſkilful hand to remove it. In ſuch a caſe, we muſt endeavour to render the courſe of the humours free again to the gums, by reſtoring them with proper aſtringent and antiſcorbutic medicines.

There are ſome perſons who pretend to remove or diſſolve this Tartar, by the uſe of ſtrong mineral acids, and, as they ſtate, without any injury whatever to the Teeth!—The public, however, cannot be too much on their guard againſt ſuch empirical pretenſions. Every profeſſional man will at once agree, that the acid, which can diſſolve the calcareous ſubſtance of the Tartar, muſt at the ſame time deſtroy the enamel of the Teeth. It is evident, therefore, that, whenever the Tartar has been ſuffered to accumulate, there is no other remedy than that of ſcaling the Teeth, by the hand of a ſkilful operator.

Some Teeth, after having been freed of their Tartar, will ſhew a very beautiful enamel: which makes it evident, that ſuch a Tartar is not of ſo acrid or corroſive a nature as the green kind generally is.

OF THE DISORDERS TO WHICH THE SOCKETS ARE LIABLE.

The Sockets are alſo ſubject to caries, as well as the Teeth, although not ſo often. The cauſes, that produce ſuch an effect in them, are the very ſame with thoſe formerly ſtated as the internal cauſe of caries in the Teeth.—The Sockets are alſo liable to be deſtroyed, by degrees, in the ſame manner as the roots of the Milk-Teeth.

This fatal diſorder proceeds from a ſtagnation of humours in the gums, where they putrify, or from any ſharp or corroſive particles that may penetrate and corrode them inſenſibly. From a ſtagnation of the fluids in the ſerous, or blood-veſſels of the gums, the Sockets and their partitions will ſometimes grow ſoft, and become entirely of a fleſhy conſiſtence, which, therefore, leaves the Tooth without ſupport. Old men generally looſe their Sockets intirely, becauſe the nutricious juices, that formerly ſerved to nouriſh the gums, are now no longer diſtributed to them.

It is worth obſerving, however, that perſons of a robuſt conſtitution are not ſo liable to loſe their Sockets, and, conſequently, their Teeth; for, we ſee people extremely old with all their Teeth, and their gums quite perfect: their Sockets, therefore, muſt be ſound, and in good condition.

There is no other way to prevent thoſe diſorders, but by taking a particular care in cleaning the gums, never letting any corroſive particles, or any viſcid matter that is likely to putrify, enter into the Sockets; ſo that the gums may become ſtrong, and apply themſelves cloſely round the necks of the Teeth.

OF THE DISORDERS OF THE GUMS.

Whenever the Gums are affected, they generally loſe their colour, their firmneſs, and conſequently, their adheſion to the Teeth; they will, at different times, appear pale, flabby, relaxed, rough, corroded, inflamed, and wrinkled. The lividity of the Gums proceeds from ſome defect in the circulation of the blood through them.

To remedy, as much as poſſible, ſo diſagreeable a circumſtance, it will be very proper to rub the Gums pretty often in the morning, and likewiſe to ſcarify them, in order to let out ſome blood, and in that way promote the circulation. If, after theſe means have been uſed, the complaint remains the ſame, it will be then neceſſary to have the phyſician's aſſiſtance, as the fault muſt be rooted in the conſtitution.

The Gums grow often ſo thick, that they in ſome meaſure reſemble pin-cuſhions; and, by communicating their ſwelling to the lips, they will greatly deform the mouth and face. This diſorder proceeds either from the compreſſion of the tartar, or a local plethora. If it proceeds from the firſt of theſe, the tartar muſt be removed immediately; then ſcarify or prick the Gums, and adminiſter proper antiſcorbutic and aſtringent medicines.

But if the ſwelling proceeds from a plethora, which is eaſily known, a proper method muſt be taken to evacuate the vitiated humours, and to diminiſh the thickneſs of the Gums in the points that run in betwixt each Tooth, where the ſwelling more manifeſtly appears; then proper aſtringents ſhould alſo be applied to prevent the complaint from recurring. The patient muſt live on a proper regimen, and ſubmit to the neceſſary ablutions.

A ſwelling as big as a ſtrawberry, ſometimes appears in the Gums of young people, which is more unſightly and deformed, than dangerous; but it is neceſſary to diſperſe it as ſoon as poſſible. The ſame cauſes that ſwell the Gums, will alſo produce excreſcences upon them. If theſe proceed from an external cauſe, the effect will ceaſe, when once that is removed; but, where the cauſe is internal, all outward applications will be uſeleſs. Sometimes theſe excreſcences will be greater than at other times. When they begin, they are never dangerous: but, if they are neglected, and increaſe, the Tooth ſoon becomes looſe, and of courſe is ſoon loſt. Abſorbent remedies are to be applied in the beginning; but when the excreſcence is arrived to a certain ſize, then it cannot be deſtroyed, but either by carefully cutting off the redundant part of the Gum, or by conſuming it in ſome other way.

The ſubſtance of the Gums may be diminiſhed, either for want of ſufficient nouriſhment, or by being too tenſe and firm; for then they are apt to hinder the fluids from circulating properly; hence it happens, that the Teeth are deprived of their neceſſary ſupport, and the Gums become a very diſagreeable ſight to the eye. The want of juices, and the contracted ſtate of the veſſels, which are the chief cauſes, may be removed by means of proper emollients, &c.

which, by relaxing the parts that were too tenſe and firm, will promote the dilatation of the veſſels, and conſequently, the courſe of the humours will be more free, and their quantity augmented. We muſt not, however, delay the cure too long, for ſometimes art comes too late.

The paleneſs of the Gums proceeds from the deficiency of the globular part of the blood; which may be occaſioned, likewiſe, by the narrowneſs of the veſſels. It is eaſy, by rubbing the Gums pretty often, to recall the blood, and conſequently reſtore to them their natural colour.

Whenever the Gums are relaxed, and want that tenſity and firmneſs which is ſo abſolutely neceſſary for their being in a ſound ſtate, various complaints are generally the conſequence; and therefore, proper antiſcorbutic aſtringents muſt be made uſe of, in time, to prevent and remedy ſuch fatal diſorders.

The Gums are ſometimes rough, as if ſpread all over with little grains, like millet-ſeeds, under the ſkin. Theſe little tumours are hard and ugly, ſometimes will come to a ſuppuration, and render the Gums very painful. Theſe are, therefore, to be prevented, by applying very ſtrong reſolvents; then we muſt make uſe of detergents, and come, by degrees, to aſtringents.

Children who eat too much ſugar, or ſweetmeats, generally have their Gums corroded. Confectioners and Chymiſts are ſubject to this diſorder, becauſe the ſaline and corroſive particles that fly from the ſugar and minerals, affect their Gums. This diſeaſe ſhould by no means be neglected: and, firſt of all, the cauſe muſt be removed; then the proper aſtringent and ſweetening medicines muſt be adminiſtered, to purify the maſs of blood; and it is very neceſſary to abſtain from every thing too ſalt, ſpicy, high-ſeaſoned, or what elſe may render the blood acid or ſharp.

The inflammation of the Gums proceeds, for the moſt part, from the impreſſion of cold air; the beſt remedy, therefore, is to keep them warm.

That the Gums are alſo ſubject to cancerous tumours, from the above cauſes, evidently appears; and they ſhould always be ſpeedily extirpated. Such a diſorder muſt be conſidered as a local affection that has proceeded from ſome glandular or vaſcular part of the Gums being vitiated, together with an internal or prediſpoſing cauſe in the habit: it requires, therefore, a very ſerious and mature conſideration, before ſuch a cure is undertaken, leſt we ſhould hurry on to the operation too precipitately.

Sometimes ulcers will affect the Gums. Their external cauſes are, rotten Teeth, the tartar, violent falls, blows, vitiated ſaliva, or any other injury offered to them. The ſcurvy, and vitiated humours, are the internal cauſes; and, therefore, a radical cure of the ulcers will never take place, except theſe are entirely got the better of. They are ſometimes more, ſometimes leſs, deep in the Gums; when they are not deep, aſtringents and antiſcorbutics may be of uſe; but, when they are deep, they will even produce a ſwelling, and an excreſcence in the Gums: and, therefore, we muſt take care to cut off the ſuperfluity, and follow the method that was mentioned when we ſpoke of tumours and excreſcences.

Ulcers are of different ſorts, and vary greatly in their appearance; but, as they always proceed from the above cauſes (and the nature of this work will not allow of prolixity), it will be unneceſſary to deſcribe them.

The abſceſſes, or impoſthumes, that are formed in the Gums, proceed, for the moſt part, from ſome bad Tooth, or from ſome Tooth not drawn in time; or they may proceed from the intemperature of the air, from ſome violent blow, &c. as alſo from the extraction of a Tooth difficult to draw. When the cord of the Tooth is left uncovered, either by a caries, or ſome other cauſe, it ſwells and inflames, communicating the inflammation to the perioſteum, that covers the root, and lines the ſocket and ſubſtance of the maxillary bones; the inflammation then proceeds to the ſocket, and ſo to the Gums, where the abſceſs is formed, from its being a much ſofter part. We muſt not neglect to examine the Tooth; and, if we find that to be the cauſe, it muſt be drawn immediately, even if there was a flux of humours upon the Gums; for, the corrupted matter, that ſtagnates in that place, might be very pernicious to the contiguous bony ſubſtance: then we muſt make uſe of thoſe remedies that are preſcribed in ſuch caſes, in order to make a perfect cure; for, if it were not ſpeedily effected, it would prove deſtructive to the Gums, the ſockets, and the contiguous Teeth.

The ſame cauſes, alſo, will produce fiſtulas in the Gums, which are more or leſs of a malignant nature. In order to remove them, it will be proper to make uſe of the ſame things that were preſcribed for the abſceſſes, or of any thing elſe that the ſkilful practitioner will find neceſſary.

Little cancers, that appear ſometimes in the Gums, may be deſtroyed by a cauſtic. Thoſe that ariſe from ſome internal cauſe, are more malignant and ſtubborn. Sometimes they are very numerous, and ſmall, of colour different from other cancers, and almoſt always accompanied by ulcers ſomewhere elſe.

Thoſe that proceed from the fluids being tainted by the venereal diſeaſe, are diſtinguiſhed from thoſe that ariſe from a ſcorbutic humour; for, the former are deeper, more painful, and full of blood, yielding a great quantity of fœtid matter, and occaſioning a great ſwelling in the lips. The ſecond are of a milder nature, and not ſo inflammatory. Without purifying the vitiated humours internally, as was formerly hinted, all outward applications will be quite uſeleſs.

The Gums are alſo ſubject to ſuppuration; and, in this way, they are not only liable to be deſtroyed, but the Teeth alſo. I have remarked, that fat perſons are more ſubject to this diſorder than thoſe of a meagre conſtitution, on account of their having a greater quantity of humours. The fore parts of the *inciſores*, *canini*, and ſmall grinders, towards the root, are moſt liable to be affected with it; they grow of a browniſh colour; and, in proportion as the diſorder either increaſes or declines, they aſſume a different appearance.

Suppuration frequently happens in thoſe Gums where the ſockets are wanting. The Gum, as well as the ſocket, being diveſted of the perioſteum, and conſequently not able to adhere, is, by being left to itſelf, and expoſed to the air, affected with little ulcers, that will ſoon occaſion ſuppuration; and, therefore, it becomes neceſſary, in order to avoid more dangerous conſequences, to cut off that part of the Gum which is left unattached; and, likewiſe, to remove all other cauſes, ſuch as the ſurcharge of humours, &c. by adhibiting medicines which may be adapted to anſwer that end.

Regenerated Paper.

CASES.

CASE I.

About three years ſince, a Lady, from the county of Kent, having had one of the *dentes molares*, on the left ſide of the upper jaw, unſkilfully drawn, applied to William Bromfield, Eſq. Surgeon to her Majeſty, and to St. George's Hoſpital (a gentleman not more diſtinguiſhed by his maſterly knowledge in his profeſſion, than by his liberality and politeneſs), who, upon inſpecting the ſeat of the complaint, deſired I might be ſent for. Her diſtreſs, we ſuſpected, aroſe from matter contained in the hollow parts of the maxillary bones which form the ſinus, called *antrum highmorianum*.* Upon acquainting the Lady with the little pain the operation would give her, ſhe conſented to its being performed; and in the preſence of Mr. Bromfield, I made a puncture, with the uſual inſtrument, through the bottom of the ſocket of the Tooth, which had been extracted, into the ſinus, from whence a conſiderable quantity of very fœtid matter, of a diſagreeable colour, iſſued. The ſinus was directly deterged, by means of a ſyringe, with my Tincture; which being repeated, every four or five hours, ſhe perfectly recovered from her complaint in a few days.

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* This ſinus is not very properly named from Dr. Highmore, as it was evidently known, before his time, to the great Veſalius, and others. (See Palfin's Oſteology, tab 2, fig. 2 —Drake's Anatomy, tab. 18, fig: 1 and 2.)—Morgagni obſerves, theſe ſinuſſes are ſometimes wanting, though very rarely.—*Adverſaria Anatomica*, vi.

CASE II.

A Gentleman, in a diſtinguiſhed ſtation in the Eaſt Indies, about the ſame period, returned to this Kingdom, in conſequence of a complaint in his mouth, which aroſe from a broken point of one of the upper *inciſores* irritating the gums.. A fleſhy excreſcence, the ſize of a large filbert, was formed between the upper lip and the *os malæ*, which was attended with ſevere pain, and had a cancerous appearance. He conſented to have the excreſcence removed from the root; which I immediately performed with a ſmall biſtory. A ſlight hæmorrhage followed, which was ſtopped with a piece of lint dipped in my Tincture, with which the wound was conſtantly waſhed twice a-day; and, in leſs than a week, the patient was perfectly cured.

CASE III.

Some years ſince, Captain Nelſon, of the Royal Navy, (whom I accidentally met with at Portſmouth), ſhewed me a ſimilar fleſhy excreſcence, conſiderably larger than the former, which, whenever he was ſhaved, gave him uncommon pain He applied to one of the ſurgeons at the Hoſpital, who aſſured him the caſe was venereal, and had prepared him to go through a mercurial courſe. I gave my opinion of the complaint; and the ſurgeon, upon a conſultation, having no objection to its being extirpated, I removed it with a biſtory, and the cure was completed, in a few days, without any other application than the Tincture.

I ſaw this gentleman two years afterwards, when his perfect ſtate of health confirmed my prognoſtic, and convinced the Hoſpital-ſurgeon of his miſtake.

CASE IV.

A Lady of diſtinction, about twenty-two years of age in the month of July, 1777, ſent for me, in conſequence of a very alarming complaint in her mouth. Her gums appeared greatly ſwelled, looked very florid, and were exceedingly painful; ſhe complained of a braſſy taſte, and had ſome difficulty of ſwallowing any kind of ſolid food.

An apothecary in the neighbourhood had been applied to, the day before I ſaw her, and pronounced the diſeaſe an inflammatory ſore throat, from cold. Though, at that time, I had ſome ſuſpicion that her diſtreſs aroſe from another ſource, I had no objection to her continuing the uſe of an emollient gargle, with nitre, which had been ordered for her. The next day, all her ſymptoms were aggravated; when, being ſtill farther confirmed in the conjecture I had at firſt formed, I requeſted an experienced ſurgeon might be conſulted, and accordingly, Mr. Glover, Surgeon-Major of the Eſſex regiment, the following morning was called in. On inſpecting the ſeat of the diſorder, we found three of the lower *inciſores* looſe, the breath very fœtid, and a great quantity of ſaliva ſecreted from the glands. The laſt-mentioned gentleman, on our retiring, declared, the Lady had been taking ſome preparation of mercury, which was the cauſe of the above ſymptoms.

As the matter was of ſo delicate a nature, and the other practitioner did not fall in with this opinion, though it intirely correſponded with that I had at firſt adopted, the utmoſt caution was obſerved in aſking the neceſſary queſtions of the Lady, and her domeſtics. One of them, after a long enquiry, ſaid, the hair-dreſſer had occaſionally uſed a ſmall quantity of ſome mercurial pomatum. The man, who lived in the neighbourhood, was directly ſent for; and after ſome heſitation, produced a box, which was found to contain about an ounce of the *Unguentum Neapolitanum*, not above half a drachm of which, it appeared, he had uſed in the dreſſing, in order to prevent a certain kind of animalculæ from breeding in the hair. By proper medical treatment, the Lady recovered her health in about ten days after; but her gums continued in a ſpongy, flaccid ſtate, for ſome time, till they were brought to their natural beauty and firmneſs, by the repeated uſe of the Tincture, which I found, by experience, the beſt application, yet diſcovered, for ſtrengthening the gums, and making them adhere to the Teeth, after they have been injured by the exhibition of mercurial medicines.

I have been the more particular, in the recital of the above caſe, as I think a ptyaliſm more frequently happens from this cauſe, than is generally imagined; and as it ſhews, in a ſtriking manner, how ſoon ſome conſtitutions are affected by the ſmalleſt quantities of mercury, even externally applied. Two caſes, which lately came under my inſpection, though not attended with ſuch ſevere ſymptoms, have corroborated this opinion.

CASE V.

I ſhall juſt lay before the reader another inſtance of the cauſe of a painful diſorder being egregiouſly miſtaken.

An Officer of the Guards, about twenty-three years of age, being, laſt autumn, upon a viſit to his friends in Yorkſhire, was ſeized with a violent pain on both ſides of the face, which, according to his own words, “ ran along the upper jaw, and terminated at the ear." His diſorder was treated by a practitioner, ſaid to be very eminent for his phyſical knowledge, as a rheumatic complaint; for which he was bled, and took a quantity of medicines. But, the pain continuing ſome days, with great violence, another phyſician was conſulted, who declared the diſeaſe was of a nervous kind, and, accordingly, ordered him into the warm bath, and preſcribed camphire and opium, in large doſes. Receiving little benefit from this treatment, the gentleman came to town, and conſulted me, on the very evening of his arrival.

On examining his mouth, I felt two of the *dentes ſapientiæ*, of the upper jaw, making their way through the gums, which I immediately lanced; and his complaint intirely left him, before ten o'clock that night.

Several caſes, of a ſimilar kind, have come under my inſpection, in the courſe of my practice; but the above are ſufficient to caution every ſagacious practitioner from pronouncing, without the ſtricteſt examination, upon the nature of general ſymptoms, which have been too often called by the names of diſorders that never exiſted.

CASE VI.

About the beginning of the year 1782, Richard Cary, Eſq. (late of the Middle Temple), of a healthy habit, about twenty-ſix years of age, was afflicted with a violent heat, ſwelling, and bleeding in his gums, which prevented him from chewing his food, and which continued nearly three weeks, when he conſulted an apothecary, who attended him for nearly two months; during which time, he took ſeveral medicines, was bled, and conſtantly gargled his mouth with a ſolution of honey of roſes in diſtilled vinegar. The complaint, however, increaſed, and a ſurgeon of character, being called in, pronounced his caſe, "a waſting of the *alveolar* proceſs, from a conſtitutional diſeaſe, which would probably deſtroy the gums, and occaſion the loſs of moſt of his Teeth."

Not ſatisfied with this melancholy prognoſtic, he applied to a celebrated dentiſt, who readily undertook to remove his complaint in a ſhort ſpace, by means of a lotion and opiate, which ſeemed, in the courſe of ſome weeks, only to increaſe the patient's diſtreſs.

In the month of July, 1783, Mr. Cary's gums appeared one common ulcer; and the necks of the *inciſores* and *canini* of the jaws were entirely denuded.

When I firſt ſaw him, about the beginning of Auguſt following, there was a conſiderable diſcharge of matter from the inſide of the gums, which appeared in puffs, all along the upper jaw, of a dark brown colour, hanging over the ſockets of the Teeth, moſt of which were looſe. I directly took off the ragged ſwellings of the gums, with a biſtory, which gave him no pain, and ſcarified them between each Tooth, directing him to apply my Tincture, ſeveral times a-day, with a fine ſponge, adding to each ſpoonful of it, fifty drops of the Thebaic Tincture of the London Diſpenſatory. He was ordered to live ſparingly, with reſpect to rich animal ſoups, which he had been ſuffered to indulge in for a conſiderable time, and drink a pint of the ſtrong decoction of Peruvian bark, twice a day.

In about ten days, I took off ſeveral more pieces of redundant fleſh from the gums, both of the upper and lower jaw, and had the great ſatisfaction to find freſh granulations, of a fine natural colour, ſprouting round the necks of the Teeth which were looſe.

In a week after, being diſguſted with the bark, and in every reſpect better, he left it off, as well as the Tinct. Thebaic, uſing my Tincture only twice a day, morning and evening, keeping it in his mouth for ten minutes, or a quarter of an hour.

Mr. Cary being unexpectedly obliged to go to the Continent, I heard no more of him 'till laſt November, when I received the following letter:

" SIR,

" I think myſelf obliged, from a principle of gratitude, to return you my thanks, for the great advantages I have derived from your Tincture, which effectually removed my complaints in little more than five weeks, after I began to uſe it every morning and evening. My Teeth are now firmly fixed in their ſockets, and my gums in a firm and healthy ſtate. As I owe this ſalutary alteration to the efficacy of your valuable remedy, you are at liberty to publiſh an account of my caſe, which the Faculty have pronounced a very ſingular one, in the papers, or in any other manner you may think expedient.

" I am, SIR, &c. &c.

" R. CARY."

" *Spa, Nov.* 6.
" *Mr. Ruſpini, Pall-Mall, London.*"

CASE VII.

Chevalier Ruspini, Surgeon-Dentiſt to His Royal Highneſs the Prince of Wales, having, in the courſe of his extenſive practice, often met with caſes wherein perſons, from miſtaken motives of economv, have incautiouſly been induced to uſe improper mixtures, either for cleanſing or preſerving their Teeth, or for remedying ſome trifling pain, and thereby produced quite the contrary effects, wiſhes to guard the public, and particularly ſuch as are poſſeſſed of good Teeth, againſt this imprudence.

He is induced to make this caution public, from a recent circumſtance, which occurred a few weeks ago, when a Lady applied to him for his advice, in conſequence of having had a fine ſet of Teeth almoſt deſtroyed by the application of mineral acids, taken from an old family recipe. Theſe compoſitions are the more dangerous, becauſe, on firſt application, they render the Teeth beautifully white, and induce the acquaintance, of ſuch as try the experiment, to fall into the ſame ſnare, which is diſcovered, in a ſhort time, by a total change of colour, either to yellow or brown, and a deſtruction of the enamel; whereby the bony part of the Tooth becomes expoſed to the air, and, in common with any other bone in like circumſtances, to quick decay, attended with frequent excruciating pains Many ladies, in this town, have reaſon to lament the irreparable loſs of a once beautiful ſet of Teeth, by trying ſimilar applications.

Inſtead of ſuch dangerous experiments, the effects of which are not to be remedied, the Chevalier can ſafely recommend the uſe of his Dentifrice Powder and Tincture, which have ſtood the teſt of nearly half a century's uſe, by the principal nobility and gentry in London, and other parts of Europe, as well as in the Eaſt and Weſt Indies, and America, and are celebrated as the moſt effectual remedies for all diſorders incident to the Teeth and Gums, rendering the former beautifully white, and preſerving them ſound and uſeful 'till old age, and clearing the latter from all ſcorbutic eruptions.

His Elixir, for the cure of the Tooth-ach, in caſes where extraction is not neceſſary; and Styptic, for the immediate ſtoppage of bleeding, however violent, whether internal or external, to be had as uſual.

RUSPINI's DENTIFRICE AND TINCTURE.

This Tincture, which has, for ſo many years, been uſed and ſanctioned by the firſt nobility and gentry, will be found moſt ſalutary during the preſent ſeaſon, the effects of cold and damp air, on the Teeth and Gums, being repelled and counteracted by its balſamic and aſtringent qualities. Its moſt powerful uſe is to defend the nerves connected with the Teeth, which are now moſt liable to be affected, and often with the moſt excruciating pain.

For violent Tooth-achs, the Chevalier recommends his ELIXIR, which will, almoſt inſtantaneouſly, remove that anguiſh

Theſe medicines (with his BALSAMIC STYPTIC, for the cure of hæmorrhages, both internal and external), are to be had of him, in Pall-Mall, and of the venders under his ſpecial appointment.

The Chevalier is compelled, from the number of perſonal applications at his houſe, to reſtrict his out-door viſits, unleſs in caſes of particular neceſſity, to Tueſdays and Fridays only. On the other days of the week, he is to be found at home, and conſulted, as uſual, on all diſorders which relate to the Teeth and Gums.

Pall-Mall, December 1, 1800.